

The invention according to ~~Claim 9~~ of the present invention is a magnetic field sensor characterized by comprising:

a Hall element which outputs a signal in accordance with an applied magnetic field strength;

an amplifier which amplifies the output signal of this Hall element and outputs a voltage signal to an output terminal pair;

a condenser of which respective terminals are connected to the terminals of the output terminal pair of said amplifier;

a switch which is inserted to make a connection with one terminal of said output terminal pair and one terminal of said condenser and which is closed by a first signal given from the outside of said switch and is opened by a second signal given from the outside of said switch;

output terminals which output voltages of both ends of said switch respectively;

a comparator which inputs signals of these output terminals respectively and converts the results of the comparison of the differential signal of said input signals with a predetermined voltage into a binary signal so as to output; and

a latch circuit which inputs said binary signal and said second signal, and outputs either value of said binary signal, synchronized with one phase of said second signal,

wherein the polarities of the voltage signals of the output terminal pair of said amplifier between the period of said first signal and the period of said second signal are of mutually opposite polarities.

The invention ~~according to Claim 9~~ can cancel the input offset voltage of the amplifier with a simple circuit and can latch the input voltage at the timing when the second phase ends so as to output a constant digital value of 0 or 1.

The invention according to ~~Claim 10~~ of the present invention is a magnetic field sensor ~~according to Claim 8 or 9~~, characterized in that predetermined voltage of said comparator varies depending on the output signal of said latch circuit.

The invention ~~according to Claim 10~~ can extract from a comparator, a signal which is stable against noise signals and of which the chattering is suppressed by providing the reference value set for the judgment by the comparator with a hysteresis. By giving this signal to a latch circuit, a stable signal which has a high judgment precision can be extracted from the latch circuit.

Though the novel characteristics of the invention are nothing more than the particular description in the attached claims, the present invention with respect to both the configuration and the contents, together with other purposes or characteristics, will be better understood and evaluated by